

the subimago period. Since the life-span of the adult mayfly is relatively short and swarming for most species can best be carried out during periods of warm, fair weather, it is a distinct advantage to the mayfly to have its aerial existence prolonged so as to tide it over times of cold, inclement weather. It has been noted that unusually large swarms of *Hexagenia* follow an interval of cool, windy, and rainy weather.

LITERATURE CITED

- CLEMENS, W. A. 1913. New species and life histories of Ephemeroidea or Mayflies. *Can. Ent.*, 45: 246-262.
CLEMENS, W. A. 1915. Life histories of Georgian Bay Ephemeroidea of genus *Heptagenia*. *Suppl. 47th Ann. Rept. Dept. Marine and Fish., Fish. Branch. Cont. Can. Biol. Fasc. II*, 131-133.

Onthophilus kirni New Species, and Two
Other Noteworthy Histeridae from
Burrows of a Texas Pocket-
Gopher

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The following Histeridae were collected in burrows of *Geomys breviceps atwateri* in Central Texas in the manner outlined in the foregoing paper.

ABRAEINAE

Onthophilus kirni new species

Holotype male.—Elongate oval, robust, convex, black, shining.

Head punctate throughout, punctures dense and confluent, especially in clypeal region, interspaces rugose; surface without striae, carinae, or ridges.

Pronotum not continuous in outline with elytra; sides very broadly, obtusely angulate, somewhat rounded; lateral bead prominent with a deep inner groove along entire length of side, deepest at anterior angle and extended for a short distance mesad along anterior margin which is very shallowly emargi-

nated, nearly straight; surface evenly, weakly convex; punctate throughout, the punctures irregular in shape and size—smallest on disk, largest and densest laterally, interspaces shiny; disk without longitudinal ridges or carinae; with a very prominent, deep groove at lateral fourth, nearest sides at base, and extending to apical third, arcuate, outer margin of groove most abrupt, shining.

Elytra narrow behind, with two prominent, deep fossae at basal margin just within mesal half; surface continuous with that of pronotum, not inflated, with rather uniform, longitudinal carinae—seven larger, broader, shiny carinae with three or four lesser ones between; the grooves scarcely crenulate or fossate except distad; subhumeral stria very deep, broad, sinuous, deeply fossate; area between this stria and margin with large, shallow, disk-like punctation in apical half. Propygidium quadrate, one-third broader than long; with a rounded, longitudinal, medial elevation; punctation coarse, irregular, especially across base and on sides, very fine at vertex of elevation. Pygidium elongate, little less than twice as long as wide; surface without ridges, rather smooth except for two shallow, sub-lateral impressions near basal margin; coarsely, irregularly punctate, interspaces shining.

Prosternum broad, flat, obtusely emarginated at base; punctation fine, sparse, with larger punctures interspersed with finer ones. "Mesosternum" with punctures deep, sparse. "Metasternum" rather impressed along median longitudinal suture; punctures evenly spaced, deep with micropunctures in interspaces. Pterothoracic pleurites with broad, disc-like, shallow, nearly contiguous punctures.

Protibiae slender with eight spicules, each on an elevated base.

Length (anterior pronotal margin to apex of elytra), 3.0 mm.

Allotype female.—Very similar to male but somewhat broader with the head and pronotum more sparsely punctate, the "metasternum" not depressed, and the protibial denticules larger, more numerous and extended nearly to base.

Length, 3.1 mm.

Holotype and allotype.—Collected in a bait trap in a *Geomys* burrow, seven and one-half miles S. E. Somerset, TEXAS (near San Antonio); February 18, 1943 (A. J. Kirn); [California Academy of Sciences].

Paratypes.—Numerous males and females collected at the above locality in bait traps and by excavating *Geomys* burrows by A. J. Kirn and the writer.

These specimens will be distributed among the major insect collections in this country.

Kirni is separated at once from all other North American *Onthophilus* by its prominent, basal, elytral fossae and small, deep punctuation of the "sternal" plates. All other species of the genus have very broad, disc-like, shallow punctures on these plates. It, and its allies, *lecontei* Horn* and *soltaii* Casey† form a natural group of species characterized by the simplicity of the elytral carinae and the development of the sublateral pronotal grooves. *Lecontei* and *soltaii* are very similar to one another if not conspecific. I have seen specimens of the former from California which have pronotal grooves very similar to those of the holotype of *soltaii*, although the reduction of these grooves is characteristic of most California specimens. A series of specimens from Colorado may reveal that this variation may also occur in *soltaii*.

Kirni was encountered in large numbers in the nest chamber of *Geomys breviceps attwateri*. As many as nineteen specimens were found in one nest and 115 specimens were collected in all, counting those obtained in bait traps. This appears to be the normal habitat of the *kirni* and, in view of their rarity, animal burrows may likewise be the true habitat of *soltaii* and *lecontei*. Indeed, a small series of the latter species was collected in *Thonomys* burrows at Atascadero, California, February 8, 1940, by J. W. Tilden. Only a few specimens of this species had previously been captured in all the years it has been known.

* Trans. Amer. Ent. Soc., III, p. 138, 1870; type locality, Ft. Tejon, Calif.

† Ann. New York Acad. Sci., VII, p. 557, 1893; type locality, Denver, Colo.

SAPRININAE

Geomysaprinus goffi Ross

Geomysaprinus goffi Ross, 1940, Ann. Ent. Soc. Amer., XXXIII, p. 3, fig. 1, 1940. [Type locality: Leesburg, Fla.; in a *Geomys* burrow.]

Forty specimens of this species were collected near Somerset, Texas in bait traps and nest chambers of the *Geomys* during December, January and February. Except for their consistently smaller size, they appear to be very similar to the Florida specimens. The species may be expected to occur throughout the range of *Geomys* in the United States.

It should be noted here that *Saprinus rugosifrons* Fall* is actually a *Geomysaprinus* and is closely related to *goffi* but separable by the much stronger punctuation of pronotum and elytra. Since the type was collected apparently far north of the range of *Geomys*, *Geomysaprinus* may be encountered in burrows made by other animals.

HISTERINAE

Spilodiscus gloveri (Horn)

Hister gloveri Horn, Trans. Amer. Ent. Soc., III, p. 135, 1870. [Type locality: Ft. Cobb, Indian Territory (Oklahoma).]

Until Mr. Kirn and the writer collected eleven specimens of this species in *Geomys* burrows near Somerset, Texas, it apparently had not been collected since it was described from a unique specimen seventy-three years ago. *Spilodiscus floridanus* Ross (1940, p. 7) from Florida *Geomys* burrows is very similar to *gloveri* and probably will prove to be only a subspecies of it. *Floridanus* appears to differ in that the third dorsal elytral stria is consistently abbreviated apically. In the eleven specimens of *gloveri* this stria is always complete to the elytral apex.

REFERENCE

Ross, E. S. 1940, New Histeridae (Coleoptera) from the burrows of the Florida pocket gopher. Ann. Ent. Soc. Amer., XXXIII, pp. 1-9, 5 figs.

* Can. Ent., LI, p. 213, 1919; type locality, Aweme, Manitoba.